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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/659,820	09/11/2003	Kuldipsingh A. Pabla	5681-69600	5945
35690 7590 03/27/2007 MEYERTONS, HOOD, KIVLIN, KOWERT & GOETZEL, P.C. 700 LAVACA, SUITE 800 AUSTIN, TX 78701			EXAMINER PARK, JEONG S	
			ART UNIT	PAPER NUMBER

2109

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	03/27/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

## Office Action Summary

Application No.

10/659,820

Applicant(s)

PABLA ET AL.

Examiner

Jeong S. Park

Art Unit

2109

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 9/11/2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-34 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-34 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 11 September 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date 7/7/2006, 8/21/2006
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_

## DETAILED ACTION

### *Claim Objections*

1. Claims 1-6, 10, 14, 15, 18-24, and 27-32 are objected to because of the following informalities:

In claim 1, line 2, the word "a grid" should be corrected as --the grid-- for clear understanding of the claim;

In claim 1, line 4, the word "a node" should be corrected as --the one or more compute nodes-- for clear understanding of the claim;

In claim 1, line 7, the phrase "the discovered master node information" should be corrected as --to the discovered master node an information-- for clear understanding of the claim;

In claim 1, line 7, the word "the node" should be corrected as --the one or more compute nodes-- for clear understanding of the claim;

In claim 1, line 10, the word "the node" should be corrected as --the one or more compute nodes-- for clear understanding of the claim;

In claim 1, line 12, the word "the node" should be corrected as --the one or more compute nodes-- for clear understanding of the claim;

In claim 2, line 1, the word "the node" should be corrected as --the one or more compute nodes-- for clear understanding of the claim;

In claim 2, line 3, the phrase "the discovered master node information" should be corrected as --to the discovered master node the information-- for clear understanding of the claim;

In claim 2, lines 3-4, the word "the node" should be corrected as --the one or more compute nodes-- for clear understanding of the claim;

In claim 3, lines 1-4, the word "the node" should be corrected as --the one or more compute nodes-- for clear understanding of the claim;

In claim 3, lines 2-4, the phrase "a compute node" should be corrected as --the compute node-- for clear understanding of the claim;

In claim 4, lines 2-7, the word "the node" should be corrected as --the one or more compute nodes-- for clear understanding of the claim;

In claim 5, lines 1-2, the word "the node" should be corrected as --the one or more compute nodes-- for clear understanding of the claim;

In claim 6, lines 3-5, the word "the node" should be corrected as --the one or more compute nodes-- for clear understanding of the claim;

In claim 6, line 5, the phrase "a compute node" should be corrected as --the compute node-- for clear understanding of the claim;

In claim 10, line 5, the word "a grid" should be corrected as --the grid-- for clear understanding of the claim;

In claim 10, line 3, the phrase "the one or more nodes" should be corrected as --one or more nodes-- for clear understanding of the claim;

In claim 10, line 5, the word "the nodes" should be corrected as --the one or more compute nodes-- for clear understanding of the claim;

In claim 14, line 8, the phrase "the discovered master node information" should be corrected as --to the discovered master node an information-- for clear understanding of the claim;

In claim 14, line 8, the word "the node" should be corrected as --the one or more compute nodes-- for clear understanding of the claim;

In claim 15, line 3, the phrase "the discovered master node information" should be corrected as --to the discovered master node the information-- for clear understanding of the claim;

In claim 15, lines 3-5, the word "the node" should be corrected as --the one or more compute nodes-- for clear understanding of the claim;

In claim 18, line 3, the word "a grid" should be corrected as --the grid-- for clear understanding of the claim;

In claim 19, line 5, the phrase "the discovered master node information" should be corrected as --to the discovered master node an information-- for clear understanding of the claim;

In claim 19, lines 5-9, the word "the node" should be corrected as --the one or more compute nodes-- for clear understanding of the claim;

In claim 20, lines 1-3, the word "the node" should be corrected as --the one or more compute nodes-- for clear understanding of the claim;

In claim 20, lines 2-3, the phrase "a compute node" should be corrected as --the compute node-- for clear understanding of the claim;

In claim 21, lines 1-7, the word "the node" should be corrected as --the one or more compute nodes-- for clear understanding of the claim;

In claim 22, lines 1-2, the word "the node" should be corrected as --the one or more compute nodes-- for clear understanding of the claim;

In claim 23, lines 2-4, the word "the node" should be corrected as --the one or more compute nodes-- for clear understanding of the claim;

In claim 24, line 2, the word "a job" should be corrected as --the job-- for clear understanding of the claim;

In claim 27, line 6, the phrase "the discovered master node information" should be corrected as --to the discovered master node an information-- for clear understanding of the claim;

In claim 27, lines 6-10, the word "the node" should be corrected as --the one or more compute nodes-- for clear understanding of the claim;

In claim 28, lines 1-4, the word "the node" should be corrected as --the one or more compute nodes-- for clear understanding of the claim;

In claim 28, lines 2-4, the phrase "a compute node" should be corrected as --the compute node-- for clear understanding of the claim;

In claim 29, lines 2-7, the word "the node" should be corrected as --the one or more compute nodes-- for clear understanding of the claim;

In claim 30, lines 2-3, the word "the node" should be corrected as --the one or more compute nodes-- for clear understanding of the claim;

In claim 31, line 5, the phrase "a compute node" should be corrected as --the compute node-- for clear understanding of the claim; and

In claim 32, line 3, the word "a job" should be corrected as --the job-- for clear understanding of the claim.

Appropriate correction is required.

***Claim Rejections - 35 USC § 101***

2. 35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

3. Claims 1-34 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter.

Independent claims 1 and 19 are drawn towards a grid computing system or a method for discovering a master node and sending the information. This can be just an abstract idea. In order for an abstract claim to be statutory, it must result in useful, concrete, and tangible results. The final result achieved by the claimed invention does not produce any tangible result because the output results are not stored or displayed anywhere.

Claims 2-9 and 20-26, which are dependent on claims 1 and 19 respectively, do not add any tangible results to the claim and thus are rejected for the same.

Independent claim 10 is drawn towards a master node for configuring and submitting jobs to compute nodes. This can be just an abstract idea. In order for an abstract claim to be statutory, it must result in useful, concrete, and tangible results. The

final result achieved by the claimed invention does not produce any tangible result because the output results are not stored or displayed anywhere.

Claims 11-13, which are dependent on claim 10, do not add any tangible results to the claim and thus are rejected for the same.

Independent claim 14 is drawn towards a program instructions executable by the processor for discovering, sending, receiving, and configuring a node. This can be just an abstract idea. In order for an abstract claim to be statutory, it must result in useful, concrete, and tangible results. The final result achieved by the claimed invention does not produce any tangible result because the output results are not stored or displayed anywhere.

Claims 15-17, which are dependent on claim 14, do not add any tangible results to the claim and thus are rejected for the same.

Claim 18 is drawn towards a grid computing system comprising means for discovering, obtaining, and configuring a node. This can be just an abstract idea. In order for an abstract claim to be statutory, it must result in useful, concrete, and tangible results. The final result achieved by the claimed invention does not produce any tangible result because the output results are not stored or displayed anywhere.

Claim 27 is drawn towards a computer-accessible medium comprising program instructions to implement the claimed steps. The computer-accessible medium is not in one of the statutory categories. The specification provides no explicit and deliberate definition of the computer-accessible medium.



Claims 28-34, which are dependent on claim 27, do not add any explicit and deliberate definition of the computer-accessible medium to the claim and thus are rejected for the same.

***Claim Rejections - 35 USC § 103***

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 1-34 are rejected under 35 U.S.C. 103(a) as being unpatentable over Doyle (U.S. Patent No. US 6,009,455) in view of IEEE Conference Proceeding (hereinafter IEEE)(When Peer-to-Peer comes Face-to-Face: Collaborative Peer-to-Peer Computing in Mobile Ad hoc Networks by Kortuem et al., published in First International Conference on Peer-to-Peer Computing proceedings, August 2001, Pages: 75-91)

Regarding claim 1, Doyle discloses as follows:

A grid computing system (hereinafter interpreted as distributed computing system, see, e.g., Abstract) or a method comprising;

A master node (master computer, reference character 5 in figure 2a) configured to manage a grid comprising one or more compute nodes (client computer, reference character 11 in figure 2a)(master computer executes a master control program, reference character 10 in figure 2a, to manage the distributed computation between job request/output means and client computers, see, e.g., col. 3, lines 42-57 and figure 2a);

A node sending the master node information about the node (client control program, reference character 12 in figure 2a, sends to the master computer the existence and configuration of various predetermined resources on the client computer, see, e.g., col.3, line 64 to col. 4, line 10);

Wherein the master node is further configured to send grid configuration information to the node (job computation module, 14 in figure 2c, determine which mode the program should operate based on the job request message from job request means, 1 in figure 2c, and sends it to the available clients, see, e.g., col. 5, line 64 to col. 6, line 16); and

The node is further configured to self-configure as a compute node in the grid in accordance with the grid configuration information (availability algorithm, 13 in figure 2b, concludes the respective client computer as available clients and qualification algorithm, 45 in figure 2b, determines the available clients as a candidate to participate in a distributed computation, see, e.g., col. 4, lines 11-27).

Doyle does not disclose of discovering the master node in accordance with one or more peer-to-peer platform protocol.

IEEE discloses as follows:

A mobile peer-to-peer system in ad-hoc network of discovering neighboring devices automatically (see, e.g., page 82, section 3.3.4:Resource Discovery); and

Presence protocol contains messages that allow peers to announce their presence and the availability of entities throughout a network (see, e.g., page 85, section 4.2.3: Protocols and Messages).

It would have been obvious for one of ordinary skill in the art at the time of the invention to modify Doyle to include the peer-to-peer protocol as taught by IEEE in order to connect efficiently the client computers, which have not been connected as a fixed network, with the master computer to participate in distributed or grid computing system.

Regarding claim 2, Doyle discloses as follows:

The node comprises a bootstrapping mechanism (the primary function of the availability algorithm, 13 in figure 2a, is to notify the master computer that the client is available, see, e.g., col. 3, lines 58-61) configured to discover the master node and to send the discovered master node information about the node in accordance with the one or more peer-to-peer platform protocols at startup of the node (see, e.g., col. 4, line 14-20).

Regarding claims 3, 20, and 28, Doyle discloses as follows:

The grid computing system or a method as recited in claim 1, wherein the node was previously configured as a compute node (each selected client), and wherein, to

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self-configure as a compute node in the grid in accordance with the grid configuration information, the node is further configured to update configuration (segment group package, 20 in figure 2d) of the node as a compute node in accordance with the grid configuration information (each selected client is downloaded with the job request files, 18 in figure 2d, included in the segment group package from the master control program, 46 in figure 2d, see, e.g., col.6 lines 21-26 and figure 2d).

Regarding claims 4, 21, and 29, Doyle discloses as follows:

The information about the node includes compute node configuration information for the node (client control program, reference character 12 in figure 2a, sends to the master computer the existence and configuration of various predetermined resources on the client computer, see, e.g., col.3, line 64 to col. 4, line 10);

The master node is further configured to determine from the compute node configuration information that the compute node configuration needs to be updated (qualification algorithm, 45 in figure 2b, in the master control program determines if an available client is a candidate to participate in a distributed computation, see, e.g., col. 4, lines 20-23); and

The grid configuration information sent to the node includes update information for the compute node configuration (each selected client is downloaded with the job request files, 18 in figure 2d, included in the segment group package from the master control program, 46 in figure 2d, see, e.g., col.6 lines 21-26 and figure 2d).

Regarding claims 5, 22, and 30, Doyle discloses as follows:

The node is further configured to send the master node notification (timely status message) that the node is leaving the grid (if the master control program does not receive timely status message from a selected client, it will deem that selected client off-line, see, e.g., col. 7, lines 8-12).

Regarding claims 6, 23, and 31, Doyle discloses as follows:

The master node is further configured to submit a job to the node for execution in accordance with the one or more peer-to-peer platform protocols (each selected client is downloaded with the job request files, 18 in figure 2d, included in the segment group package from the master control program, 46 in figure 2d, see, e.g., col.6 lines 21-26 and figure 2d);

To detect that the node is no longer participating as a compute node in the grid in accordance with the one or more peer-to-peer platform protocols (if the master control program does not receive timely status message from a selected client, it will deem that selected client off-line, see, e.g., col. 7, lines 8-12); and

To resubmit the job to another compute node of the grid for execution in accordance with the one or more peer-to-peer platform protocols (the master control program does not receive timely status message from a selected client, it will deem that selected client off-line and reassign the associated segment group package to another available computer, see, e.g., col. 7, lines 8-12).

Regarding claims 7, 11, 24, and 32, Doyle discloses as follows:

The grid computing system or a method further comprises a job submitter node (job request means, reference character 1 in figure 2a, see, e.g., col. 3, lines 9-12);

The master node is further configured to receive a job from the job submitter node (see, e.g., col. 4, lines 28-40 and figure 2c);

To distribute the job to the compute node for execution (each selected client is controlled by sending commands and files from the master control program to the client control program over the network, see, e.g., col. 6, lines 17-29 and figure 2d);

To receive results of the execution from the compute node (the output files from the two selected clients are uploaded to the master computer, see, e.g., col. 6, lines 56-60 and figure 2e); and

To send the results to the job submitter node (job output means, reference character 3 in figure 2a, see, e.g., col. 3, lines 20-23)(the master control program then forwards these formatted files to the job output means, see, e.g., col. 7, lines 25-36 and figure 2f).

Regarding claim 10, Doyle discloses as follows:

A grid computing system comprising a plurality of nodes (client computer, reference character 11 in figure 2a);

A master node configured to communicate with the one or more nodes in accordance with one or more peer-to-peer platform protocols (master computer executes a master control program, reference character 10 in figure 2a, to manage the distributed computation between job request/output means and client computers, see, e.g., col. 3, lines 42-57 and figure 2a)

To configure the nodes to participate as compute nodes in a grid computing system (qualification algorithm, 45 in figure 2b, in the master control program

determines if an available client is a candidate to participate in a distributed computation, see, e.g., col. 4, lines 20-23); and

To submit jobs to the compute nodes for execution (each selected client is downloaded with the job request files, 18 in figure 2d, included in the segment group package from the master control program, 46 in figure 2d, see, e.g., col.6 lines 21-26 and figure 2d).

Regarding claim 14, Doyle discloses a master computer (5 in figure 2a) and client computers (11 in figure 2a) used in the distributed computing system which inherently include a memory and a processor.

Regarding claim 15, Doyle discloses a bootstrap mechanism (availability algorithm, 13 in figure 2a) executes the program instructions.

6. Claims 8, 12, 16, 25, and 33 are rejected under 35 U.S.C. 103(a) as being unpatentable over Doyle (U.S. Patent No. US 6,009,455) and IEEE Conference Proceeding (hereinafter IEEE)(When Peer-to-Peer comes Face-to-Face: Collaborative Peer-to-Peer Computing in Mobile Ad hoc Networks by Kortuem et al., published in First International Conference on Peer-to-Peer Computing proceedings, August 2001, Pages: 75-91) as applied to claims 1, 10, 14, 19, and 27 above, and further in view of Sun Cluster Grid architecture (hereinafter Sun Cluster)(Sun Cluster Grid Architecture- a Technical White Paper Describing the Foundation of Sun Grid Computing, published by Sun Microsystems on May 2002).

Regarding claims 8, 12, 16, 25, and 33, Doyle and IEEE disclose all the limitations of claims as explained above except for be configured the grid computing system according to Sun Cluster Grid architecture

Sun Cluster discloses Sun Cluster Grid architecture provides the foundation for building and deploying a Cluster Grid system (see, e.g., pages 20-21).

It would have been obvious for one of ordinary skill in the art at the time of the invention to modify Doyle and IEEE to include Sun Cluster Grid architecture as the grid computing system as taught by Sun Cluster in order to provide scalable and reliable foundation for building and deploying a successful Grid system.

7. Claims 9, 13, 17, 26, and 34 are rejected under 35 U.S.C. 103(a) as being unpatentable over Doyle (U.S. Patent No. US 6,009,455) in view of IEEE Conference Proceeding (hereinafter IEEE)(When Peer-to-Peer comes Face-to-Face: Collaborative Peer-to-Peer Computing in Mobile Ad hoc Networks by Kortuem et al., published in First International Conference on Peer-to-Peer Computing proceedings, August 2001, Pages: 75-91) as applied to claims 1, 10, 14, 19, and 27 above, and further in view of JXTA Chapter 1 (JXTA, by Brendon J. Wilson, published by New Riders Publishing on June 2002).

Regarding claims 9, 13, 17, 26, and 34, Doyle and IEEE disclose all the limitations of claims as explained above except for using JXTA protocols as the peer-to-peer platform protocols.



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JXTA Chapter 1 defines JXTA protocols are language-independent, defining a set of XML messages to coordinate some aspect of P2P networking (see, e.g., pages 13-14).

It would have been obvious for one of ordinary skill in the art at the time of the invention to modify Doyle and IEEE to include JXTA protocols as the peer-to-peer platform protocols as taught by JXTA Chapter 1 in order to simplify the implementation of peer-to-peer networking solutions on any devices.

### ***Conclusion***

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jeong S. Park whose telephone number is 571-270-1597. The examiner can normally be reached on Monday through Thursday 7:30 - 5:00 EST.

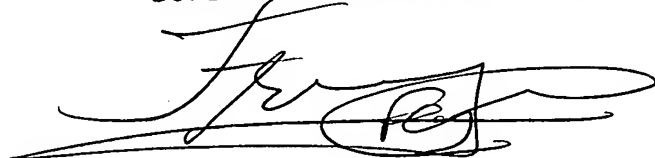
If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Frantz Jules can be reached on 571-272-6681. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

JSP  
March 16, 2007

FRANTZ JULES  
SUPERVISORY PATENT EXAMINER

A handwritten signature in black ink, appearing to read 'Frantz Jules', is written over the printed name and title. The signature is stylized with a large 'F' and a cursive 'J'.